УДК 616.5-002.3-036-092.19

M.O. Dashko[1], O.I. Denysenko[2]

INDICATORS OF SYSTEMIC IMMUNITY IN PATIENTS SUFFERING FROM PYODERMATOSIS WITH VARIOUS CLINICAL COURSE

[1]Danylo Halytsky National Medical University (Lviv)
[2]Bukovinian State Medical University (Chernivtsi)

Abstract. It was established that patients with pyodermatosis had changes in indicators of cellular and humeral immune system with manifestations of secondary immunodeficiency state in T-cell link. It was revealed the relationship between the nature of changes of systemic immunity and clinical course of pyodermatosis which justifies a differentiated administration of immunocorrecting drugs to such patients.

Key words: pyodermas, clinical course, systemic immunity.

Introduction. Pyodermas are a group of pustular skin diseases caused by pyogenic cocci (staphylococci, streptococci and others) [1, 3, 10]. A high incidence of pyodermas, a tendency to chronicity, frequent development of deep forms with stable scarring of the skin is the cause of psycho-emotional disorders in patients, reducing their ability to work and social activity that generally defines an important medical and social significance of pyoderma and justifies the relevance of research with a study of pathogenetic factors of pyococcus skin lesions to improve their treatment and prevention [2, 8, 9].

It has been established by today that the pathogenesis of pyoderma is a complex, multifactorial, and the changes of immune reactivity of the organism play an important role [1-3, 7]. However, information on the immune system in these patients are often ambiguous and contradictory - they register as a manifestation of increased immune activity and the formation of secondary immunodeficiency state, which may contribute to chronic dermatoses piokokovyh and their resistance to standard therapy tools [4, 7-9]. In this regard, the urgent task of modern dermatology is to establish the nature of changes of systemic immunity in patients with pyoderma with different clinical course in order to clarify the pathogenetic factors and develop differentiated methods of treatment.

Objective. To determine and analyze the values of the systemic immunity in patients, suffering from pyodermias with their different clinical course

Material and methods. 128 patients with pyodermias aged from 18 to 69 among which 74 men (57,8 %) and 54 women (42,2 %) were observed. They had been concluded into the study according to the following criteria: clinical signs of primary pyodermia, patients' age which was more than 18 years old, absence of chronic somatic disease or their exacerbations when the patient was being examined. According to the clinical criteria [1, 3], 69 (53,9 %) patients were diagnosed with staphyloderma, 40 of them had superficial forms (osteofolliculitis, folliculitis, sycosis vulgaris while 29 of the patients had deep forms (boils, hydradenitis) 36 (28,1 %) were diagnosed with streptococcal impetigo, 20 of them had superficial forms (streptococcal impetigo itself) and 16 –deep ones (ecthyma), 23 (18,0 %) had mixed pyodermias, 14 of which with superficial forms (vulgar impetigo) and 9 patients had deep ones(chronic ulcerous pyodermia). In 44 (34.4 %) patients pustular skin process occurred for the first time, in 84 (65,6 %) it had a chronic course. The control group were 34 practically healthy persons (donors) of the same age.

For the assessment of systemic immunity in patients with pyoderma, we determined: total and relative number of T-lymphocytes (CD3 +), T-helper (CD4 +) and T-suppressor lymphocytes (CD8 +), immunoregulatory index - IRI (CD 4 + / CD 8+), the number of B lymphocytes (CD19 +) by indirect immunofluorescence using monoclonal antibodies to cell surface antigens and serum of (Ig) immunoglobulins of class M, G, A according to the known method [6]. Statistical analysis of the results of research was carried out by the methods of statistical analysis [5] using the computer program Statistica 6.0, the probable average difference was considered at $p<0,05$.

Results of the study and discussion. While determining the indicators of the systemic immunity in 128 patients with pyodermias we established their probable ($p<0,001$) changes, compared with the indicators with patients in the control group: decrease in relative and absolute number of total lymphocytes pool – by 20,4 % (28,9±0,69%, in the control group – 36,3±0,91 %) and 21,2 % (1,90±0,051 cal/ml in the control group – 2,41±0,10 cal/ml), T lymphocytes – by 19,2 % (47,1±1,33 %, in the control group – 58,3±1,09 %) and 33,7 % (0,955±0,033 cal/ml in the control group – 1,44±0,082 cal/ml), T-helper lymphocyte subpopulations – according to 11,7 % (33,1±0,34 %, in the control group – 37,5±0,91 %) and in 22,9 % (0,613±0,022 cal/ ml in the control group – 0,796±0,054 cal/ ml), and the relative number of T-suppressor lymphocytes – by 13,9 % (18,5±0,15 %, in the control group – 21,5±0,93 %) against the backdrop of increasing relative and absolute number of B lymphocytes – by 14,3 % (25,6±0,30 %, in the control group – 22,4±0,81 %) and 35,2 % (0,488±0,014 cal/mkl in the control group – 0,360±0,020 cal/ml) and IgM levels – by 25,7 % (1,81±0,047 g/l in the control group – 1,44±0,06 g/l) and IgG – to 40,4 % (13,3±0,25 g/l in the control group – 9,49±0,34 g/l).

Table

Values of the systemic immunity in patients suffering from pyodermas with different clinical course

Values, units	Control group n=34	Superficial streptodermas n_1=26	Deep streptodermas n_2=10	Superficial staphilodermas n_3=40	Deep staphilodermas N_4=29	Superficial combined pyodermas N_5=14	Deep combined pyodermas N_6=9
lymphocytes %	36,3± 0,912	32,5± 1,12*	24,4± 1,13*** p_{1-2}<0,001	31,6± 1,22** p_{1-3}>0,05; p_{2-3}<0,01	23,8± 1,29*** p_{1-4}<0,001; p_{2-4}>0,05; p_{3-4}<0,001	31,4±0,845*** p_{1-5}>0,05; p_{2-5}<0,001; p_{3-5}>0,05; p_{4-5}<0,01	19,1±0,707*** p_{1-6}<0,001; p_{2-6}<0,001 p_{3-6}<0,001; p_{4-6}>0,05 p_{5-6}<0,001
lymphocytes thousand. кl/мкl	2,41± 0,10	2,04± 0,042*	1,24± 0,062*** p_{1-2}<0,001	2,18± 0,060* p_{1-3}>0,05; p_{2-3}<0,001	1,29± 0,041*** p_{1-4}<0,001; p_{2-4}>0,05; p_{3-4}<0,001	2,22±0,042*** p_{1-5}>0,05; p_{2-5}<0,001; p_{3-5}>0,05; p_{4-5}<0,01	1,58±0,049*** p_{1-6}<0,001; p_{2-6}<0,001 p_{3-6}<0,001; p_{4-6}<0,001 p_{5-6}<0,001
CD 3+ (T-lymphocytes), %	58,3± 1,09	53,3± 0,492***	44,1± 0,676*** p_{1-2}< 0,001	53,9± 0,373*** p_{1-3}>0,05; p_{2-3}<0,001	49,1± 0,608*** p_{1-4}<0,001; p_{2-4}<0,001; p_{3-4}<0,001	51,4±0,527*** p_{1-5}<0,05; p_{2-5}<0,001; p_{3-5}<0,001; p_{4-5}<0,05	41,4±0,719*** p_{1-6}<0,001; p_{2-6}<0,05 p_{3-6}<0,001; p_{4-6}<0,001 p_{5-6}<0,001
CD 3+ (T-lymphocytes), thousand. кl/мкl	1,44± 0,082	1,13± 0,025**	0,546± 0,031*** p_{1-2}<0,001	1,15± 0,049** p_{1-3}>0,05; p_{2-3}<0,001	0,948± 0,046*** p_{1-4}<0,01; p_{2-4}<0,001; p_{3-4}<0,01	1,17±0,027* p_{1-5}>0,05; p_{2-5}<0,001; p_{3-5}>0,05; p_{4-5}<0,001	0,654±0,025*** p_{1-6}<0,001; p_{2-6}<0,05 p_{3-6}<0,001; p_{4-6}<0,01 p_{5-6}<0,001
CD 4+ (T-helpers), %	37,5± 0,912	33,8± 0,202***	27,3± 0,577*** p_{1-2}<0,001	35,2± 0,289* p_{1-3}<0,001; p_{2-3}<0,001	31,0± 0,438*** p_{1-4}<0,001; p_{2-4}<0,001; p_{3-4}<0,001	34,2±0,352* p_{1-5}>0,05; p_{2-5}<0,001; p_{3-5}>0,05; p_{4-5}<0,001	25,0±0,535*** p_{1-6}<0,001; p_{2-6}<0,01 p_{3-6}<0,001; p_{4-6}<0,001 p_{5-6}<0,001
CD 4+ (T-helpers), thousand. кl/мкl	0,796 ± 0,054	0,73± 0,015	0,339± 0,014* p_{1-2}<0,001	0,768± 0,024 p_{1-3}>0,05; p_{2-3}<0,001	0,622± 0,015** p_{1-4}<0,001; p_{2-4}<0,001; p_{3-4}<0,001	0,760±0,018 p_{1-5}>0,05; p_{2-5}<0,001; p_{3-5}>0,05; p_{4-5}<0,001	0,399±0,019*** p_{1-6}<0,001; p_{2-6}<0,05 p_{3-6}<0,001; p_{4-6}<0,001 p_{5-6}<0,001
CD 8+ (T-supressors), %	21,5± 0,934	19,5± 0,356	16,8± 0,222* p_{1-2}<0,001	18,7± 0,160** p_{1-3}<0,05; p_{2-3}<0,001	18,0± 0,314** p_{1-4}<0,01; p_{2-4}<0,001; p_{3-4}<0,05	18,2±0,023* p_{1-5}<0,05; p_{2-5}<0,001; p_{3-5}>0,05; p_{4-5}>0,05	16,4±0,429** p_{1-6}<0,001; p_{2-6}>0,05 p_{3-6}<0,001; p_{4-6}<0,05 p_{5-6}<0,001
CD 8+ (T-supressors, thousand. кl/мкl	0,336 ± 0,042	0,397± 0,011	0,207± 0,011 p_{1-2}< 0,001	0,409± 0,014 p_{1-3}>0,05; p_{2-3}<0,001	0,364±0,014 p_{1-4}>0,05; p_{2-4}<0,001; p_{3-4}>0,05	0,405±0,010 p_{1-5}>0,05; p_{2-5}>0,05; p_{3-5}<0,001; p_{4-5}>0,05	0,260±0,010 p_{1-6}<0,001; p_{2-6}<0,01 p_{3-6}<0,001; p_{4-6}<0,001 p_{5-6}<0,001
CD 4+/CD 8+ (Immunoregulatory index)	1,73± 0,13	1,85± 0,028	1,63± 0,0349 p_{1-2}>0,05	1,88± 0,009 p_{1-3}>0,05; p_{2-3}>0,05	1,73±0,033 p_{1-4}>0,05; p_{2-4}>0,05; p_{3-4}<0,001	1,88±0,018 p_{1-5}>0,05; p_{2-5}>0,05; p_{3-5}>0,05; p_{4-5}>0,05	1,53±0,05 p_{1-6}<0,001; p_{2-6}>0,05 p_{3-6}<0,001; p_{4-6}<0,01 p_{5-6}<0,001

Table (continuation)

Values, units	Control group n=34	Superficial streptodermas n_1=26	Deep streptodermas n_2=10	Superficial staphilodermas n_3=40	Deep staphilodermas N_4=29	Superficial combined pyodermas N_5=14	Deep combined pyodermas N_6=9
CD 19+ (B-lymphocytes	22,4± 0,812	23,0± 0,459	25,6± 0,747* p_{1-2}<0,01	22,3± 0,366 p_{1-3}>0,05; p_{2-3}<0,001	27,5± 0,347*** p_{1-4}<0,001; p_{2-4}<0,05; p_{3-4}<0,001	23,9±0,595 p_{1-5}>0,05; p_{2-5}>0,05; p_{3-5}<0,05; p_{4-5}<0,001	30,7±0,521*** p_{1-6}<0,001; p_{2-6}<0,001 p_{3-6}<0,001; p_{4-6}<0,001 p_{5-6}<0,001
CD 19+ (B-lymphocytes), thousand. кл/мкл	0,36± 0,02	0,467± 0,012***	0,478± 0,012*** p_{1-2}>0,05	0,490± 0,016*** p_{1-3}>0,05; p_{2-3}>0,05	0,550± 0,012*** p_{1-4}<0,001; p_{2-4}<0,01; p_{3-4}<0,01	0,532±0,016** p_{1-5}<0,001; p_{2-5}<0,05; p_{3-5}>0,05; p_{4-5}>0,05	0,485±0,018*** p_{1-6}>0,05; p_{2-6}>0,05 p_{3-6}>0,05; p_{4-6}<0,05 p_{5-6}>0,05
Immunoglobulines A, g/l	1,98± 0,06	1,78± 0,077***	1,60± 0,027** p_{1-2}>0,05	1,83± 0,071 p_{1-3}>0,05; p_{2-3}>0,05	1,93±0,076 p_{1-4}>0,05; p_{2-4}>0,05; p_{3-4}>0,05	1,87±0,080 p_{1-5}>0,05; p_{2-5}>0,05; p_{3-5}>0,05; p_{4-5}>0,05	1,48±0,166*** p_{1-6}>0,05; p_{2-6}>0,05 p_{3-6}<0,05; p_{4-6}<0,05 p_{5-6}<0,05
Immunoglobulines M, g/l	1,44± 0,06	1,33± 0,056	2,10± 0,093*** p_{1-2}<0,001	1,56± 0,042 p_{1-3}>0,05; p_{2-3}<0,001	2,22± 0,082*** p_{1-4}<0,001; p_{2-4}>0,05; p_{3-4}<0,001	1,90±0,037*** p_{1-5}<0,001; p_{2-5}<0,05; p_{3-5}<0,001; p_{4-5}<0,001	2,83±0,101*** p_{1-6}<0,001; p_{2-6}<0,001 p_{3-6}<0,001; p_{4-6}<0,001 p_{5-6}<0,001
Immunoglobulines G, g/l	9,49± 0,34	10,63± 0,394	15,5± 0,404*** p_{1-2}<0,001	12,1± 0,217*** p_{1-3}<0,001; p_{2-3}<0,001	16,0± 0,181*** p_{1-4}<0,001; p_{2-4}>0,05; p_{3-4}<0,001	11,9±0,270*** p_{1-5}<0,05; p_{2-5}<0,001; p_{3-5}>0,05; p_{4-5}<0,001	18,1±0,195*** p_{1-6}<0,001; p_{2-6}<0,001 p_{3-6}<0,001; p_{4-6}<0,001 p_{5-6}<0,001

Notes: 1. * – Differences in the degree of probability compared to the control group: * – p<0,05; ** – p<0,01; *** – p<0,001.
2. p_{1-2}, p_{1-3}, p_{2-4} – Differences in the probability of different groups of patients

The analysis of systemic immunity in patients with pyoderma depending on clinical form and depth of skin lesions, which are presented in the table, showed that in patients with superficial pyoderma it was only noted a moderate, compared to the control group, relative decrease in the number of total lymphocyte pool (with surface streptoderma - to 10,5 %, p<0,05, in staphilodermias - by 13,7 %, p<0,01), reducing the relative and absolute number of T cells (with superficial streptodermas – 8,5 % and 21,5 %, p<0,01, in staphilodermias - by 7,5 %, p<0,001 and 20,1 %, p<0,01, with mixed pyodermas - by 12,0 %, p<0,001 and 18 7 %, p<0,05), the relative number of T-helper cells (with superficial streptodermas – by 9,9 %, p<0,001, while with staphilodermas by 6,24 % and combined with pyodermas – by 8,1 %, p<0,05) and the absolute number of B-lymphocytes (with superficial streptoderma – 29,4 % staphilodermas – by 35,7 %, combined pyoderma – by 47,4 %, p<0,001).

However, patients with deep pyoderma forms had experienced significant changes in all monitored parameters and systemic humoral immunity as compared to the control group indices and indicators as compared to patients with superficial pyoderma form. Thus, in patients with deep pyoderma there was likely (p<0,001) decrease in absolute and relative number of common pool of lymphocytes compared to the control group performance (respectively with deep streptoderma – 32,8 % and 48,5 %, with deep staphilodermas – 34,4 % and 46,5 %, combined with deep pyoderma – by 47,4 % and 34,4 %) and patients with corresponding indicators of superficial forms of pyoderma (compared to superficial streptodermas – by 24,9 % and 39,2 %, staphilodermas – 34,4 % and 40,8 %, combined pyoderma –- by 39,2 % and 28,8 %). The patients with deep pyoderma also experienced a significant reduction of the relative and absolute number of T-lymphocytes compared to the performance of the control group (respectively in deep streptoderma – 24,4 % and 62,1 %, with staphilodermas – 15,8 % and 34,7 % with combined pyoderma – 28,9 % and 54,6 %, p<0,001) and patients with corresponding indicators of superficial forms of pyoderma (compared to the superficial streptodermas – by 17,3 % and 51,7 %, p<0,001, staphilodermas – by 8,9 %, p<0,05 and 17,6 %, p<0,01 and superficial combined pyoderma – 19,5 % and 44,1 %, p<0,001. In patients with deep pyoderma forms the relative and absolute number of T-helper lymphocytes also

reduced compared with the control group (the deep streptoderma – 27,2 % and 57,4 %, p<0,001 and staphilodermas – by 17,3 %, p<0,001 and 21,9 %, p<0,01; in deep combined pyoderma – 33,3 % and 49,9 %, p<0,001) and relevant groups of patients with superficial pyoderma superficial streptoderma – 19,0 % and 46,6 % for staphilodermas – by 13,2 % and 19,1 % for combined superficial pyoderma – 26,9 % and 47,5 %, p<0,001).

At the same time, in patients with deep pyoderma the relative number of T-suppressors reduced compared to the control group indicators (with deep streptoderma – by 21,9 %, p<0,05, with deep staphilodermas – 16,3 % and deep pyoderma combined – by 23,6 %, p<0,01), as well as the relative and absolute number of T-suppressors compared with patients, having corresponding superficial pyoderma (concerning patients with superficial streptoderma – by 13,8 % and 47,9 % and combined pyoderma – by 8,8 % and 35,8 %, p<0,001).

The analysis of the humoral immune system in patients with different clinical forms of pyoderma showed a significant,as compared to the control group,increase in the absolute number of B-lymphocytes in patients with deep streptoderma (respectively by 14,3 %, p<0,05 and 32,4 %, p<0,001), staphiloderma (22,7 % and 52,4 %, p<0,001) and combined pyoderma (37,1 % and 34,3 %, p<0,001), and the increase in the relative number of lymphocytes compared with groups of patients with corresponding clinical forms of pyoderma (as compared to superficial streptodermas – by 10,9 %, p<0,01, staphilodermas – 23,2 % and combined pyoderma – by 28,5 %, p<0,001) without probable differences between the absolute values of B lymphocytes. In addition, the patients with deep pyoderma had probable increase of IgM and IgG as compared to indices of the control group (respectively in deep streptoderma – by 45,8 % and 63,3 %, deep staphiloderma – by 54,2 % and 68,6 % of deep pyoderma combined – by 96,5 % and 90,72 % p<0,001), and patients with superficial pyoderma (on superficial streptoderma – by 37,3 % and 45,8 %, superficial staphilodermas – 42,3 % and 32,0 %, superficial pyoderma combined – by 48,5 % and 52,2 %, p<0,001).

The analysis of systemic immunity in patients with different clinical forms of pyoderma (staphiloderma, streptoderma, combined) with superficial skin lesions didn't find significant differences in these patients except the relative number of T-helper cells, which, in patients with superficial staphiloderma, was slightly higher than that of patients with superficial streptoderma (by 9,9 %, p<0,05) and combined pyoderma (by 19,4 %, p<0,001). At the same time, there were no significant differences in most studied parameters of the systemic immunity between patients with deep pyoderma depending on the etiological factor, only in case of combined pyoderma there was probable decrease of the relative number of lymphocytes compared with the rate of patients with deep streptoderma (by 21,7 %, p<0,001), decrease in relative and absolute number of T-lymphocytes compared with indicators of patients with deep streptoderma (respectively, 6,1 % and 19,8 %, p<0,05) and deep staphiloderma (respectively: by 15,7 %, p<0,001 and by 31,0 %, p<0,01), reducing the relative and absolute number of T-helper cells compared to figures of patients with deep streptoderma (respectively: by 8,2 %, p<0,01 and 17,7 %, p<0,05) and staphiloderma (19,4 % and 35,9 %, p<0,001). In patients with deep combined pyoderma there was also a significant increase compared to patients with deep strepto-staphiloderma and relative number of B-lymphocytes (respectively 20,1 % and 11,8 %, p<0,001), and the level of IgM (34,8 % and 27,5 %, p<0,001) and IgG (16,8 % and 13,1 %, p<0,001).

Consequently, most of the patients with pyoderma had varying degrees of changes in rates of systemic immunity – the likely reduction in relative and absolute number of total lymphocytes, T lymphocytes and their subpopulations against the growing number of B lymphocytes and the level of IgM and IgG, which generally indicates the formation in these patients secondary immunodeficiency state of T link on the background of activation of humoral immunity in response to the development of pyococcus skin inflammation. The most significant changes in rates of systemic immunity with the depletion of T-cell immunity were found in patients with deep pyoderma forms, especially in deep combined pyoderma with prolonged chronic course, with no significant differences in immune parameters depending on the etiological factor of pyoderma (streptoderma, staphiloderma) justifying differentiated administration of immunomotropic drugs for such patients.

Conclusion

In patients with pyoderma,changes in systemic immunity indexes that indicate the formation of secondary immunodeficiency state T-cell link, amid an adequate humoral immunity have been found. It was established that there is a relationship between the nature of changes of systemic immunity and clinical course of pyoderma justifying differentiated administration of the immunocarrective drugs to such patients.

Prospects for further research. Prospects for further research is the development and evaluation of integrated treatment of various forms of pyoderma with differentiated administration of immunocorrective treatment, considering the systemic immunity of the patients.

References

1. Айзятулов Ю.Ф. Стандарты диагностики и лечения в дерматовенерологии: иллюстрированное руководство / Ю.Ф. Айзятулов. – Донецк: Каштан, 2010. – 560 с.
2. Галникіна С.О. Піодермії / С.О. Галникіна // Інфекційні хвороби. – 2009. – № 2. – С. 85-93.
3. Дерматологія, венерологія: підручник / За ред. проф. В.І. Степаненка. – К.: КІМ, 2012. – 848 с.
4. Карвацька Ю.П. Стан системного імунітету у хворих на вульгарні вугрі з різним ступенем змін біоценозу порожнини товстої кишки / Ю.П. Карвацька, О.І. Денисенко // Укр. ж. дерматол., венерол., косметол. – 2014. – № 1 (52). – С. 35-40.

5. Лапач С.Н. Основные принципы применения статистических методов в клинических испытаниях / С.Н. Лапач, А.В. Чубенко, П.Н. Бабич. – К.: Морион, 2002. – 160 с.
6. Посібник з лабораторної діагностики / Л.Є. Лаповець, Б.Д. Луцик, Г.Б. Лебедь [та ін.]. – Львів, 2008. – 268 с.
7. Bergler-Crop B. Pyoderma gangrenosum in a patient with common variable primaty immunodeciency / B. Bergler-Crop, L. Brzezinska-Weislo // Postep. Derm. Alergol. – 2013. – Vol. 30, № 3. – P. 188-191.
8. Chriba M. Beclometasone inhaler used to treat pyoderma gangrenosum / M. Chriba, A.M. Skellett, N.J. Levell // Clin. and Experim. Dermatol. – 2010. – Vol. 35, № 3. – P. 337-338.
9. Tolerance clinique des antiseptiques cutanes chez 3403 malades en pratique de ville / E. Caumes, M. Le Maitre, J.-M. Garnier [et al.] // Ann. de Dermatol. et de Venereolologie. – 2013. – Vol. 133, № 10. – P. 755-760.
10. Treatment of superficial bacterial cutaneous infections: A survey among general practitioners in France / E. Fourtillan, V. Tauveron, R. Binois [et al.] // Ann. de Dermatol. et de Venereol. – 2013. – Vol. 140, № 12. – P. 755-762.

ПОКАЗАТЕЛИ СИСТЕМНОГО ИММУНИТЕТА У БОЛЬНЫХ ПИОДЕРМИЯМИ С РАЗНЫМ КЛИНИЧЕСКИМ ТЕЧЕНИЕМ

М.О. Дашко[1], О.И. Денисенко[2]

Резюме. Установлено, что у больных пиодермиями имеют место изменения показателей клеточного и гуморального системного иммунитета с проявлениями вторичного иммуннодефицитного состояния по Т-клеточному звену. Выявлено наличие взаимосвязи между характером изменений показателей системного иммунитета и особенностями клинического течения пиодермий, что обосновывает дифференцированное назначение таким пациентам иммуннокорригирующих препаратов.

Ключевые слова: пиодермии, клиническое течение, системный иммунитет.

ПОКАЗНИКИ СИСТЕМНОГО ІМУНІТЕТУ У ХВОРИХ НА ПІОДЕРМІЇ З РІЗНИМ КЛІНІЧНИМ ПЕРЕБІГОМ

М.О. Дашко[1], О.І. Денисенко[2]

Резюме. Встановлено, що у хворих на піодермії мають місце зміни показників клітинного й гуморального системного імунітету з проявами вторинного імунодефіцитного стану за Т-клітинною ланкою. Виявлено наявність взаємозв'язку між характером змін показників системного імунітету та особливостями клінічного перебігу піодермій, що обґрунтовує диференційоване призначення таким пацієнтам імунокоригуючих засобів.

Ключові слова: піодермії, клінічний перебіг, системний імунітет.

[1]Львівський національний медичний університет ім. Данила Галицького
[2] Буковинський державний медичний університет, м. Чернівці

Рецензент – доц. Г.Д. Коваль

Buk. Med. Herald. – 2015. – Vol. 19, № 1 (73). – P. 60-64

Надійшла до редакції 06.01.2015 року